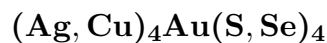


## Penzhinite



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**Crystal Data:** Hexagonal. *Point Group:* 622. Intergrowths of elongate or platy grains, to 7  $\mu\text{m}$ .

**Physical Properties:** Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 8.35

**Optical Properties:** Opaque. *Color:* In reflected light, pale gray. *Anisotropism:* Evident; creamy yellow and greenish gray.

$R_1$ – $R_2$ : n.d.

**Cell Data:** *Space Group:*  $P6_322$ .  $a = 13.779$   $c = 16.980$   $Z = 18$

**X-ray Powder Pattern:** Sergeevskoye deposit, Russia.

2.59 (10), 2.71 (9), 2.14 (9), 2.11(9), 1.989 (6), 3.38 (5), 1.784 (5)

**Chemistry:**

	(1)
Ag	51.3
Au	24.3
Cu	3.1
Se	7.1
S	13.8
<hr/>	
Total	99.6

(1) Sergeevskoye deposit, Russia; by electron microprobe, corresponding to  $(\text{Ag}_{3.65}\text{Cu}_{0.32})_{\Sigma=3.97}\text{Au}_{0.97}(\text{S}_{3.31}\text{Se}_{0.69})_{\Sigma=4.00}$ .

**Occurrence:** In a near-surface Au–Ag deposit.

**Association:** Gold, aguilarite, chalcopyrite, galena.

**Distribution:** From the Sergeevskoye Au–Ag deposit, 60 km northeast of Pevirechenskii, near the Penzhina River, northern Kamchatka, Russia [TL].

**Name:** For the Penzhina River, near the Kamchatka Peninsula, Russia.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82766.

**References:** (1) Bocek, L.I., S.M. Sandomirskaya, N.G. Chuvikina, and V.P. Khvorostov (1984) A new selenium-containing sulfide of silver, gold, and copper – penzhinite  $(\text{Ag, Cu})_4\text{Au}(\text{S, Se})_4$ . *Zap. Vses. Mineral. Obshch.*, 113, 356–360 (in Russian). (2) (1985) *Amer. Mineral.*, 70, 875–876 (abs. ref. 1).